

Appln. No. 10/800,963
Response A, dated January 7, 2005
Reply to Office Action of October 20, 2004

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REMARKS/ARGUMENTS

A. Concerning the Amendments

The instant application was filed on March 15, 2004, with Claims 1 to 34. By Preliminary Amendment, dated July 2, 2004, Claims 8, 10-17, and 19-21 were canceled, and new Claims 35 and 36 were added. By amendment hereinabove, all of Claims 1-36 now stand canceled, and a new set of claims, Claims 37-54, are submitted herewith for examination.

Support for new independent Claim 37 is found at page 3, lines 17-30; at page 4, lines 22-25; at page 5, lines 5-22; at page 8, lines 23-26; at page 11, lines 1-31, continuing on through page 15, lines 1-2, of the specification.

Support for new dependent Claim 38 is found at page 7, lines 22-29, of the specification.

Support for new dependent Claim 39 is found at page 6, lines 31-34, continuing onto page 7, lines 1-5, of the specification.

Support for new dependent Claim 40 is found at page 8, lines 2-7, of the specification.

Support for new dependent Claim 41 is found at page 8, lines 11-14, of the specification.

Support for new dependent Claim 42 is found at page 8, lines 14-17, of the specification.

Support for new dependent Claim 43 is found at page 8, lines 23-26, of the specification.

Support for new dependent Claim 44 is found at page 17, lines 8-11, of the specification.

Support for new dependent Claim 45 is found at page 9, lines 28-32, of the specification.

Support for new dependent Claim 46 is found at page 15, line 28, of the specification.

Support for new dependent Claim 47 is found at page 16, lines 2-8, of the specification.

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Support for new dependent Claim 48 is found at page 16, lines 14-19, of the specification.

Support for new dependent Claim 49 is found at page 10, lines 1-8, of the specification.

Support for new dependent Claim 50 is found at page 6, lines 8-12; at page 17, lines 25-33; and at page 18, lines 1-2, of the specification.

Support for new dependent Claim 51 is found at page 7, lines 12-16, of the specification.

Support for new dependent Claim 52 is found at page 7, lines 16-17, of the specification.

Support for new dependent Claim 53 is found at page 18, lines 10-18, of the specification.

Support for new dependent Claim 54 is found at page 18, lines 20-27, of the specification.

A fee authorization sheet is enclosed estimating that no fee is required for the present amendments. If the fee estimation is incorrect, the Examiner is authorized to charge Deposit Account. 04-1512 the correct fee.

B. Concerning the Rejection of Claims 1-7, 9, 18, 22-27, 29-33, and 35-36 Under 35 U.S.C. 102(b) as Anticipated by Iwakura et al.

Claims 1-7, 9, 18, 22-27, 29-33, and 35-36 stand rejected under 35 U.S.C. 102(b) as being anticipated by Iwakura et al. (US 5,502,020). Claims 1-7, 9, 18, 22-27, 29-33, and 35-36 have been canceled by amendment hereinabove; thus, effectively, the rejection is moot. Nevertheless, as the rejection might apply to new Claims 37-54, the rejection is traversed for the following reasons.

New Claim 37 pertains to a process of preparing a hydro-oxidation catalyst composition comprising gold on a titanium-containing support. The prepared catalyst is required to be capable of oxidizing an olefin with oxygen in the presence of hydrogen to form an olefin oxide. The process comprises impregnating a gold compound and impregnating a reducing agent onto the catalyst support, the reducing agent comprising an organic compound that does not contain titanium, for example, an alcohol or acid or salt thereof. The molar ratio of reducing agent to gold is required to be greater than about 0.5:1. The catalyst support

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is required to be selected from the group consisting of titanosilicates and titanium dispersed on silica.

Iwakura et al. discloses impregnation for preparing a catalyst for the direct oxidation of ethylene with oxygen to form ethylene oxide. The catalyst is taught to contain silver, tungsten, cesium, and optionally gold. The support is disclosed to comprise, for example, titania (TiO₂). Ethanol is taught as a solvent for the impregnation. Iwakura et al. does not recognize impregnation of a "reducing agent." More significantly, Iwakura et al. does not disclose a molar ratio of a reducing agent to gold of greater than about 0.5:1, as required of the claims. Iwakura et al. is also silent with respect to the support being selected from titanosilicates or titanium dispersed on silica, as the claims require. Accordingly, Iwakura et al. does not anticipate new Claims 37-54.

C. Concerning the Rejection of Claims 1, 4-5, 18, 22-23, 26-28, 20-33, and 35-36 Under 35 U.S.C. 102(b) in View of Rajaram et al.

Claims 1, 4-5, 18, 22-23, 26-28, and 20-33, and 35-36 stand rejected as being anticipated by Rajaram et al. (US 5,480,854). Claims 1, 4-5, 18, 22-23, 26-28, and 20-33, and 35-36 have been canceled by amendment hereinabove; therefore effectively, the rejection is moot. Insofar as the rejection might apply to new Claims 37 to 54, the rejection is traversed for the following reasons.

Rajaram et al. discloses co-precipitation or impregnation techniques for preparing an oxidation catalyst comprising metal oxide particles, originating from noble metal precursors, such as gold compounds, deposited on a support, such as TiO₂. Sodium formate and formaldehyde are mentioned as reducing agents. Rajaram et al. is silent with regard to a support being selected from titanosilicates or titanium dispersed on silica, as required of the claims. More significantly, Rajaram et al. is silent with regard to a molar ratio of a reducing agent to gold being greater than about 0.5:1, as required of the claims. Rajaram et al. is also silent with regard to the prepared catalyst being capable of catalyzing a hydro-oxidation of an olefin with oxygen in the presence of hydrogen to form an olefin oxide, as required of the catalyst prepared by the method of the claims. Accordingly, Rajaram et al. does not anticipate new Claims 37-54.

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D. Concerning the Rejection of Claims 1-7, 9, 18, 22-23, 25-29, and 31-33 under 35 U.S.C. 102(b) as Anticipated by Haruta et al. (US 4,937,219)

Claims 1-7, 9, 18, 22-23, 25-29, and 31-32 stand rejected under 35 U.S.C. 102(b) as anticipated by Haruta et al. (US 4,937,219). Claims 1-7, 9, 18, 22-23, 25-29, and 31-32 have been canceled by amendment hereinabove; therefore effectively, the rejection is moot. Insofar as the rejection might apply to Claims 37-54, the rejection is traversed for the following reasons.

Haruta et al. discloses a process for preparing a gold catalyst onto a metal oxide support, such as titania (TiO₂), by precipitating a gold compound onto the support in the presence of magnesium citrate. Haruta et al. is silent with respect to the support being selected from titanosilicates or titanium dispersed on silica; as required of the claims. Additionally, Haruta et al. is silent with respect to a molar ratio of reducing agent to gold being greater than about 0.5:1, as required of the claims. Accordingly, Haruta et al. does not anticipate new Claims 37-54.

E. Concerning the Rejection of Claim 34 Under 35 U.S.C. 103(a) Over Iwakura '020

Claim 34 stands rejected as being unpatentable under 35 USC 103(a) in view of Iwakura et al. Claim 34 has been canceled by amendment hereinabove; therefore effectively, the rejection is moot. Insofar as the rejection might apply to new Claim 54, the rejection is traversed for the following reasons.

New Claim 54 involves preparation of a catalyst composition as noted hereinabove, wherein the catalyst is capable of use in a hydro-oxidation process wherein propylene is oxidized with oxygen in the presence of hydrogen to form propylene oxide. The claim requires a molar ratio of reducing agent to gold of greater than about 0.5:1. The claim requires a catalyst support selected from titanosilicates or titanium dispersed on silica. In contrast, Iwakura et al. is silent with respect to the claimed molar ratio and supports. Furthermore, Iwakura et al. is silent with respect to preparing catalysts capable of hydro-oxidation of propylene (oxidation with oxygen in the presence of hydrogen); rather, Iwakura et al. relates to direct oxidations or ethylene with air (nitrogen and oxygen, for every intent and purpose devoid of hydrogen). To arrive at the invention, the skilled artisan should make many selections and modifications over Iwakura et al., namely, selection specifically of gold; selection of a molar ratio of a reducing agent to gold of greater than about 0.5:1; replacement of titania with a titanosilicate or titanium dispersed on silica; and resulting catalyst capability

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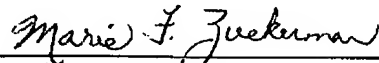
in activating a hydro-oxidation of propylene to propylene oxide. No motivation is evident in Iwakura et al. for the skilled artisan to arrive at the claimed selections and modification over the prior art. Accordingly, Claim 55 cannot be obvious over Iwakura et al.

F. Concerning the Office Action (Section 5. 6. and 7) and Conclusions

At page 7, the Office Action states that "Claims 10-17, 19, 21, and 38-46 are allowed and that Claims 8 and 10 would be allowable if rewritten in independent form." Applicants believe that this statement is an inadvertent error. Applicants note that Claims 8, 10-17, 19, and 21 were never pending in the instant application; but said claims were pending in the parent application serial no. 09/544,742 (filed April 7, 2000), which has since gone to issuance as US patent 6,821,923 (granted November 23, 2004). Also, Claims 38-46 of said parent application are not to be confused with new Claims 38-46 submitted hereinabove in the instant application. The Examiner is requested to review the granted claims of the parent application Serial No. 09/544,742, now US patent 6,821,923, in light of the new claims submitted herein.

Applicants believe that the new claims submitted hereinabove meet all requirements for patentability. A Notice of Allowance is respectfully requested at the Examiner's earliest convenience.

Respectfully submitted,



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